

CLAIMS:

1. An electronic circuit adapted to process a plurality of types of instruction, the electronic circuit comprising:
first and second pipeline stages; and
a latch positioned between the pipeline stages;
5 wherein the electronic circuit is adapted to operate in a normal mode when processing a first type of instruction in which the latch is opened and closed in response to an enable signal, and a reduced mode when processing a second type of instruction in which the latch is held open so that the instruction propagates through the first and second pipeline stages without being stored in the latch;
10 wherein the first type of instruction requires processing by the first and second pipeline stages and the second type of instruction requires processing by the second pipeline stage.
2. An electronic circuit as claimed in claim 1, further comprising a latch control circuit connected to the latch, the latch control circuit being adapted to control the latch with
15 the enable signal when the electronic circuit is in the normal mode, and to hold the latch open when the electronic circuit is in the reduced mode.
3. An electronic circuit as claimed in claim 2, wherein the latch control circuit receives a signal indicating the mode of operation of the electronic circuit.
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4. An electronic circuit as claimed in claim 1, wherein the electronic circuit is adapted to process a third type of instruction, wherein the third type of instruction does not require processing by the second pipeline stage.
- 25 5. An electronic circuit as claimed in 4, wherein the electronic circuit is adapted to operate in the normal mode until an instruction of the third type is processed.

6. An electronic circuit as claimed in claim 5, wherein, after the instruction of the third type is processed, the electronic circuit is adapted to operate in the reduced mode if the following instruction is of the second or third type.
- 5 7. An electronic circuit as claimed in claim 4, wherein the electronic circuit is adapted to operate in the reduced mode until an instruction of the first type is processed.
8. An electronic circuit as claimed in claim 1, wherein the first type of instruction includes a load instruction.
- 10 9. An electronic circuit as claimed in claim 1, wherein the second type of instruction includes an arithmetic computation instruction.
10. An electronic circuit as claimed in claim 4, wherein the third type of instruction includes compare, store, branch and jump instructions.
- 15 11. An electronic circuit as claimed in claim 1, wherein the first pipeline stage comprises a data memory.
- 20 12. An electronic circuit as claimed in any claim 1, wherein the second pipeline stage comprises a write back stage.
13. A method of operating an electronic circuit, the electronic circuit being adapted to process a plurality of types of instruction, the electronic circuit comprising first and second pipeline stages and a latch positioned between the stages, the method comprising:
- 25 operating the electronic circuit in a normal mode when processing a first type of instruction in which the latch is opened and closed in response to an enable signal, and a reduced mode when processing a second type of instruction in which the latch is held open so that the instruction propagates through the first and second pipeline stages without being stored in the latch;
- 30 wherein the first type of instruction requires processing by the first and second pipeline stages and the second type of instruction requires processing by the second pipeline stage.

14. A method as claimed in claim 13, wherein the electronic is further adapted to process a third type of instruction, wherein the third type of instruction does not require processing by the second pipeline stage.

5 15. A method as claimed in claim 14, further comprising the step of operating the electronic circuit in the normal mode until an instruction of the third type is processed.

16. A method as claimed in claim 15, wherein, after processing the instruction of the third type, the method further comprises the step of operating the electronic circuit in the
10 reduced mode if the following instruction is of the second or third type.

17. A method as claimed in claim 14, further comprising the step of operating the electronic circuit in the reduced mode until an instruction of the first type is processed.

15 18. A method as claimed in claim 13, wherein the first type of instruction includes a load instruction.

19. A method as claimed in claim 13, wherein the second type of instruction includes an arithmetic computation instruction.

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20. A method as claimed in claim 14, wherein the third type of instruction includes compare, store, branch and jump instructions.